

Serial No. 11/553,095
Filed: October 13, 2005

REMARKS/ARGUMENTS

Reconsideration of the above application in view of the above amendments and the below remarks is requested.

With the above amendments, claim 4 has been canceled and claim 1 amended. Support for the amendment to claim 1 is present in the specification in page 11, lines 11-15. No new matter has been added.

The Examiner has rejected claims 3 and 9 under 35 USC 112, first paragraph, as failing to comply with the written description requirement. The Examiner has also rejected claims 1, 3-4, 7-9 and 11-12 under 35 USC 103(a) as being unpatentable over Aoki (JP 2002-075982) et al in view of Allen et al (US 6,420,441).

In claim 3, the limitation of 25% is supported in the Example Section by Examples 1-3, as calculated below:

Example 1: 2g of poly(n-butylmethacrylate-methyl methacrylate-methacrylic acid), 1g of polyisobutyl acrylate ; Total organic resin 3g

80g of 15% PGMEA solution of polymethylsilazane ; $80 \times 0.15 = 12$
polymethylsilazane 12g

$$3g/12g = 0.25 = 25\%$$

Example 2: 3g of poly(isobutylmethacrylate-methylmethacrylate-acrylic acid) ;
Total organic resin 3g

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80g of 15% PGMEA solution of polymethylsilazane ; $80 \times 0.15 = 12$
polymethylsilazane 12g

$$3\text{g}/12\text{g} = 0.25 = 25\%$$

Example 3: 8g of poly(n-butylmethacrylate-hydroxyethylmethacrylate) ; Total
organic resin 8g

160g of 20% PGMEA solution of polymethylsilazane ; $160 \times 0.2 = 32$
polymethylsilazane 32g

$$8\text{g}/32\text{g} = 0.25 = 25\%$$

In claim 9, the limitation of 3.5 GPa is supported in the Examples Section in Examples 2. The Examiner has stated that support in the Examples "is in the context of specific films of specific polymers, which are themselves obtained from specific monomers." All Examples have to be specific since such is the nature of an Example, only specific polymers can be made and the results are specific to the composition. If a value is disclosed in an Example then it is part of the written description.

The MPEP clearly states in its guidelines that a narrowing of a range is allowable, as set forth in the MPEP sections below:

MPEP 2163 (II) A2

The analysis of whether the specification complies with the written description requirement calls for the examiner to compare the scope of the claim with the scope of the description to determine whether applicant has demonstrated possession of the claimed invention.

MPEP 2163.05 (III)

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With respect to changing numerical range limitations, the analysis must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the original disclosure. In the decision in In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976), the ranges described in the original specification included a range of "25%- 60%" and specific examples of "36%" and "50%." A corresponding new claim limitation to "at least 35%" did not meet the description requirement because the phrase "at least" had no upper limit and caused the claim to read literally on embodiments outside the "25% to 60%" range, however a limitation to "between 35% and 60%" did meet the description requirement.

The specification on page 15, line 5, clearly discloses 'not less than 3 GPa'. The description in Example 2 discloses 3.5 GPa. The limitation of 3 GPa to 3.5 GPa is a limitation within the range of not greater than 3 GPa, since both 3 and 3.5 values are disclosed, and thus, according to the MPEP, the applicants have demonstrated possession of the claimed invention. Similarly, the range of 5 to 25% in claim 3 is within the written description, since the applicants have demonstrated that the range is within the broader range of 5 to 150% and both values of 5% and 25% are disclosed.

Claim 1 has been amended to include that further limitation of wherein said group -COOH and/or group -OH are contained in an amount of 0.1 to 30% by mole based on the total number of monomers of said organic resin component.

The Examiner in this response has stated that "Aoki does not disclose specifically disclose the monomers which contain -COOH and -OH groups " and that "It would have been obvious to follow the teaching of Allen when selecting the organic resin component for the invention of Aoki, and incorporate a portion of the prescribed β -alkyl acrylates in order to obtain these improved pores which yield an improved dielectric material." The amended claim 1 relates to selected monomers and to a specific mole % incorporation of the said group -COOH and/or group -OH. Allen discloses a large list of possible

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monomers that may be incorporated into the polymers with no specific teaching as to the incorporation of these monomers in an amount of 0.1 to 30% by mole based on the total number of monomers of said organic resin component, especially said group —COOH and/or group —OH. The long list of possible monomers are disclosed in Allen starting from column 4, line 21 to column 6, line 52. The present specification clearly describes the limitation of using only specific monomers with the —COOH and/or group —OH in an amount of 0.1 to 30% by mole, since below 0.01 mole% the amount of crosslinking is insufficient and above 50 mole% crosslinking is excessive. The preferred range of 0.1 to 30 is disclosed on page 11, line 13. Since the Examiner has stated that "one of ordinary skill in the art would be motivated by common sense to select a 1:1 ratio" page 6 of the office action, the preferred range of 0.1 to 30 is unexpected to one of ordinary skill in the art and one in the art would not know to use this particular range. Therefore the applicants have provided a convincing argument that claim 1 with the present limitations of the specific type of monomers and their specific ranges are both novel and unobvious. Thus the applicants request that the Examiner remove Aoki and Allen as prior art references.

The Examiner has rejected claim 9 stating that "it is expected that resins with an elastic modulus higher than that, or within the range of 3 GPa or greater, would be achieved by the combination of these inventions." The applicants present to the Examiner that resins do not have an elastic modulus and thus the combination of references is not valid. Furthermore, since the applicants have presented above that claim 1 is both novel and nonobvious, then the film of claim 9 is also both novel and nonobvious. Similarly, since the applicants have presented above that claim 1 and 9 are both novel and nonobvious, then the device of claim 9 is also both novel and nonobvious.

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Applicants submit that the concerns of the Patent Office have been addressed. Withdrawal of the rejections and issuance of a Notice of Allowance is respectfully solicited.

Respectfully submitted,



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